Dipartimento di Matematica

Quantum cohomology and irrationality of some Fano fourfolds

Data
13/10/2026 - 14:30

Aula
Aula 4

Speaker
Nicolas Perrin

Categoria
Seminari di Algebra e Geometria Algebrica

Afferenza
CNRS

Sede
Palazzo Campana

Descrizione

Abstract: I will report on recent joint works with Vladimiro Benedetti, Aideen Fay, Jérémy Guéré and Laurent Manivel. The goal of the talk will be to explain cohomological irrationality criteria using the recent theory of Hodge atoms. Hodge atoms rely on quantum cohomology. I will present a simplified definition of them and explain a first result which uses almost only their existence. If time permits I will explain how more information on the quantum cohomology lead to more control on the locus of rational Fano fourfolds in the family. Our methods apply to three main examples: cubics (originaly proved by Katzarkov, Kontsevich, Pantev, Yu), Gushel-Mukai and Küchle (c5) fourfolds.